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TITLE : METAL COMPOSITE MATERIAL AND ITS PRODUCTION

ABSTRACT : PURPOSE: To produce a metal composite material having good characteristics as a heat radiating substrate by specifying the percentage of the aspect ratio of molybdenum grains in the rolling direction to the aspect ratio of molybdenum grains in a direction parallel to the rolled face and vertical to the rolling direction.

CONSTITUTION: For example, each powder of molybdenum and electrolytic copper is mixed so as to regulate the ratio of each powder to 3:2, which is molded and is thereafter sintered in a hydrogen atmosphere. This rolled body is held at 950°C for 20 min, is thereafter subjected to direction changing by 90 degrees, is subjected to hot cross rolling at the same draft, is subjected to surface treatment and is thereafter subjected to cold rolling in the same direction. At this time, the aspect ratio of the molybdenum grains in the X direction ($L/W_X=3.2$), the aspect ratio in the Y direction ($L/W_Y=5.8$), and $[(L/W_Y)/(L/W_X)]=1.8$, i.e., regulated to ≤ 2 . Thus, the metal composite material small in the anisotropy of the coefficient of thermal expansion and excellent in thermal conductivity can be provided.

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